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An early and favorable action is courteously solicited.

Respectfully submitted,



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**Attachments:**

Hawley's Condensed Chemical Dictionary 14<sup>th</sup> Ed. (2001), pages 268 & 879


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*Hawley's*  
**Condensed Chemical**  
**Dictionary**  
*Fourteenth Edition*

Revised by  
**Richard J. Lewis, Sr.**



JOHN WILEY & SONS, INC.



## CHROMIUM HYDRATE

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Use: Isomerization and polymerization catalyst, gas-line additive, intermediate.

chromium hydrate. See chromic hydroxide.

chromium hydroxide. See chromic hydroxide.

chromium manganese antimonide. Brittle gray solid having magnetic properties when above a definite temperature, depending on the composition.

chromium naphthenate.

Properties: Dark-green liquid or violet powder. Derivation: By addition of chromium salts to solution of sodium naphthenate and recovery of the precipitate.

Grade: 6% chromium.

Hazard: Toxic by ingestion.

Use: Paints (antichalking agent).

chromium nitrate. See chromic nitrate.

chromium oxide. See chromic oxide.

chromium oxychloride. See chromyl chloride.

chromium oxyfluoride. See chromyl fluoride.

chromium phosphate. See chromic phosphate.

chromium potassium sulfate. (chrome alum; potassium chromium sulfate; chrome potash alum).

CAS: 10141-00-1.  $\text{CrK}(\text{SO}_4)_2 \cdot 12\text{H}_2\text{O}$ .

Properties: Dark, violet-red crystals; efflorescent. D 1.813, mp 89°C, loses  $10\text{H}_2\text{O}$  at 100°C. Soluble in water.

Derivation: By reducing potassium dichromate in dilute sulfuric acid with sulfurous acid.

Hazard: Toxic by ingestion.

Use: Tanning (chrome-tan liquors), textile dye (mordant), photography (fixing bath), ceramics.

chromium sesquichloride. See chromic chloride.

chromium sesquioxide. See chromic oxide.

chromium steel. See steel, stainless; iron, stainless.

chromium sulfate. See chromic sulfate.

chromium trichloride. See chromic chloride.

chromium trifluoride. See chromic fluoride.

chromium trioxide. See chromic acid.

chromogen. See chromophore.

"Chromogene" [BASF]. TM for mordant dye-stuffs used on wool and leather. Characterized by very good fastness to light, fulling, etc.

chromophore. A chemical grouping that when present in an aromatic compound (the chromogen), gives color to the compound by causing a displacement of, or appearance of, absorbent bands in the visible spectrum. Dyes are sometimes classified on the basis of their chief chromophores, e.g.,  $-\text{NO}$ , nitroso dyes;  $-\text{NO}_2$ , nitro dyes;  $-\text{N}=\text{N}-$ , azo dyes; etc.

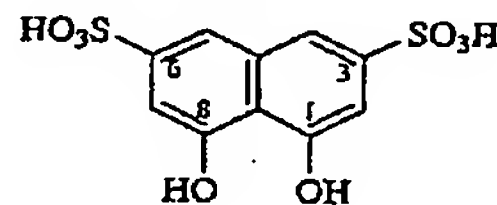
chromosome. The heredity-bearing gene carrier of the living cell derived from chromatin and consisting largely of nucleoproteins (DNA) together with other protein components (histones). See deoxyribonucleic acid; gene.

"Chromosorb" [World Minerals]. TM for a series of screened calcined and flux-calcined diatomite aggregates. Available in non-acid-washed, acid-washed, and acid-washed dimethyldichlorosilane treatments.

Grade: Chromosorb phosphorus, W, G for analytical use; Chromosorb A for preparative chromatography.

Use: Supports in gas or liquid chromatography.

chromotropic acid. (1,8-dihydroxynaphthalene-3,6-disulfonic acid).



Properties: White needles. Soluble in water; insoluble in alcohol and ether.

Derivation: Reaction of H-acid with 10% NaOH at 280°C.

Use: Azo-dye intermediate, analytical reagent.

chromous bromide. (chromium bromide).

$\text{CrBr}_2$ .

Properties: White crystals that change to yellow on heating. Oxidizes in moist air but stable in dry air. D 4.356, mp 842°C. Soluble in water (blue color).

Hazard: Toxic by ingestion, irritant to skin and tissue. TLV: 0.5 mg(Cr)/m<sup>3</sup>.

chromous carbonate. (chromium carbonate).

$\text{CrCO}_3$ .

Properties: Grayish-blue, amorphous mass. D 2.75. Soluble in mineral acids; slightly soluble in water containing carbon dioxide; insoluble in alcohol.

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Stable in air; affected by light. Mp 200C. Soluble in boiling water, boiling alcohol, dilute acids, and alkalis; sparingly soluble in ether and chloroform.

**Derivation:** Derived from the fruit of *Anamirta paniculata* or *Cocculus indicus*, fishberries.

**Hazard:** Toxic in overdose.

**Use:** Medicine, as CNS stimulant and antidote for barbiturate poisoning.

**picryl chloride.** (2-chloro-1,3,5-trinitrobenzene).  $C_6H_3(NO_2)_3Cl$ .

**Hazard:** Severe explosion and fire risk. A high explosive.

**Pictet-Gams isoquinoline synthesis.** Formation of isoquinolines by cyclization of acylated aminomethyl phenyl carbinols or their ethers with phosphorus pentoxide in toluene or xylene.

**Pictet-Hubert reaction.** Phenanthridine cyclization by dehydrative ring closure of acyl-*o*-aminobiphenyls on heating with zinc chloride at 250–300C or with phosphorus oxychloride in boiling nitrobenzene.

**Pictet-Spengler isoquinoline synthesis.**

Formation of tetrahydroisoquinoline derivatives by condensation of  $\beta$ -arylethylamines with carbonyl compounds and cyclization of the Schiff bases formed.

**"Pictol" [Mallinckrodt].** TM for monomethyl-*p*-aminophenol sulfate, a photo developer.

**PIDA.** Abbreviation for phenylindane dicarboxylic acid.

See 1,1,3-trimethyl-5-carboxy-3-(*p*-carboxyphenyl)indane.

**Pidgeon process.** (ferrosilicon process; silicothermic process). Process for the production of high-purity magnesium metal from dolomite or magnesium oxide by reduction with ferrosilicon at 1150C under high vacuum.

**piezochemistry.** Study of reactions occurring at very high pressures, e.g., in the interior of the earth's crust.

**piezoelectricity.** Electric energy created by application of pressure to ceramics or plastics. Devices utilizing this phenomenon are gas flame igniters, ultrasonic welding tools, and sonar navigation aids.

**pig iron.** Product of blast-furnace reduction of iron oxide in the presence of limestone. About half the ore is converted to iron. Average analysis is 1% silicon, 0.03% sulfur, 0.27% phosphorus, 2.4% manganese, 4.6% carbon, balance iron. Pig iron is the basic raw material for steel and cast iron. In metal terminology a "pig" is a bar or ingot of cooled

metal.  
See iron.

**pigment.** Any substance, usually in the form of a dry powder, that imparts color to another substance or mixture. Most pigments are insoluble in organic solvents and water; exceptions are the natural organic pigments, such as chlorophyll, which are generally organosoluble. To qualify as a pigment, a material must have positive colorant value. This definition excludes whiting, barytes, clays, and talc. Some pigments (zinc oxide, carbon black) are also reinforcing agents, but the two terms are not synonymous; in the parlance of the paint and rubber industries these distinctions are not always observed. Pigments may be classified as follows:

#### I. Inorganic

- (a) Metallic oxides (iron, titanium, zinc, cobalt, chromium)
- (b) Metal powder suspensions (gold, aluminum)
- (c) Earth colors (siennas, ochers, umbers)
- (d) Lead chromates
- (e) Carbon black

#### II. Organic

- (a) Animal (rhodopsin, melanin)
- (b) Vegetable (chlorophyll, xanthophyll, indigo, flavone, carotene)

See pigment, plant

- (c) Synthetic (phthalocyanine, lithos, toluidine, para red, toners, lakes, etc.)

See dye, natural; dye, synthetic.

**Pigment Blue 15.** (CI 74160).  $C_{18}H_{16}N_4Cu$ . A bright-blue copper phthalocyanine pigment.

**Derivation:** By heating phthalonitrile with cuprous chloride.

**Use:** In paints, alkyd resin enamels, printing inks, lacquers, rubber, resins, papers, tinplate printing, colored chalks, and pencils.

See phthalocyanine.

**Pigment Blue 19.** (CI 42750A).

$C_{18}H_{12}N_4O_2SNa$ . A bright-blue to bright-reddish-navy triphenylmethane pigment.

**Use:** Coloring for candles.

**Pigment Blue 24.** (CI 42090).

$C_{18}H_{12}N_4O_2S_2Na_2$ . A bright-greenish-blue triaryl-methane pigment.

**Use:** Printing inks, especially for tinplate printing; rubber, plastics; artist colors; lacquers.

**Pigment E.** See barium potassium chromate.

**Pigment Green 7.** (CI 74260).

$C_{18}O_{10}N_4Cl_{1.5-1.6}Cu$ . A bright-green chlorinated copper phthalocyanine pigment.

**Derivation:** Heating copper phthalocyanine in sulfur dichloride under pressure.

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